REMARKS

Reconsideration of the pending application is respectfully requested on the basis of the following particulars.

1. In the specification

An amendment to the abstract is provided herewith which corrects the informalities identified in the action. Acceptance of the abstract and removal of the objection is respectfully requested.

2. Rejection of claims on non-statutory obviousness-type double patenting over co-pending U.S. application 10/548,321 in view of prior art

A terminal disclaimer is submitted herewith in order to obviate the double-patenting rejection of the claims based in part over U.S. application 10/548,321.

Accordingly, withdrawal of the obviousness-type double patenting rejection of the pending claims is kindly requested.

3. Rejection of claims 1, 2 and 6 under 35 U.S.C. 102(e) as being anticipated by U.S. patent 6,755,058 (*Zillman*)

This rejection is respectfully traversed on the basis that *Zillman* fails to disclose each and every feature required by claim 1, and thus claims 2 and 6 which depend from claim 1.

It will first be pointed out that the proper "prior art" date with regard to U.S. 6,755,058 (*Zillman*) is the publication date of the corresponding International Application PCT/EP02/03367 (WO/02/090152), namely November 14, 2002. The present application effectively was filed on the filing date of the International Application PCT/EP04/04219 on April 21, 2004, claiming priority from German Application 10 320 154.8 filed May 6, 2003. Because the PCT publication date of November 14, 2002 is more than one year before the filing date of International Application PCT/EP04/04219 (filed April 21, 2004), of which this application is the U.S. national stage, reliance may be made on the published International Application PCT/EP02/03367 (WO/02/090152) as "prior art" and not 6,755,058 (*Zillman*).

Next, it will be also pointed out that the corresponding German patent 103 20 154 and European patent 1 560 735 corresponding to the pending U.S. application have been granted with the original claims (claim 1 was only slightly amended in the European patent with regard to formalities). Both of these patents were considered patentable over WO/02/090152 (or the German equivalent 101 21 714).

Turning to the teachings of *Zillman*, it is submitted that there is no teaching to provide a device for locking a steering shaft including control member that comprises a circular control disk rotatable about an axis of rotation and arranged to cooperate on a first side with a locking bolt and a second side with a rotary position detector.

In observing Figs. 1-3 of *Zillman*, it is clear that the control member (35) does not cooperate with any detector, in particular a detector for sensing any rotary position of the control member (35). Instead, *Zillman* generally teaches a device having an axially reciprocable drive element (10) arranged in a co-axial relation to a locking bolt (4) and connected therewith to move the locking bolt (4) axially to and fro. A switch (59) is actuated by the movement of the locking bolt (4) to generate a signal indicating that the locking bolt (4) is in the steering shaft release position.

Unlike the requirement in claim 1, the control member (35) of *Zillman* is not formed as a "circular control disk" which is arranged to cooperate with a first side with the locking bolt (4) and on a second side with a rotary position detector. Indeed, the control member (35) is disposed co-axially relative to the drive element (10), and cooperates with a cylindrical cross-pin (41) of the drive element (10). As shown in Fig. 3, the cross-pin (41) cooperates with two inner grooves (43, 44) which extend helically within the central borehole (51) of the control member (35) from one side to the other side of the control member (35) so as to reciprocate the locking bolt (4) between the steering shaft locking position and the steering shaft release position.

From the arrangement of the control member (35), i.e., the inner grooves, the control member (35) requires a corresponding height or thickness in the direction of its axis (8). This understanding of the control member (35) prevents it from assuming a disk shape, as required by claim 1 of the pending application. The depiction of the

control member (35) in at least Figs. 1 and 4 is misleading since these figures only show a top or plan view of the control member. Figs. 3, 6, and 9 show more clearly how the control member (35) cannot be construed to form a disk-like shape since it requires a certain thickness about the borehole (51) to accommodate the inner grooves (43, 44), and thereby cooperation with the cross-pin to permit movement of the locking bolt (4).

Contrary to the assertion in the action, the switch (59) of *Zillman* is not a rotary position detector. Instead, the switch (59) is merely actuated to generate a signal indicating that the locking bolt (4) is in the first unlocked position (col. 6, lines 12-19). While the drive element (10) actuates the switch (59) in the course of rotation of the control member (35), in no manner does it detect the rotary position of the control member, as required by pending claim 1.

From these observations, it is submitted that *Zillman* fails to disclose the circulate control disk and the rotary position detector of claim 1.

Turning to claim 6, reconsideration of its rejection in view of *Zillman* is respectfully requested. It will be pointed out that the control member (35) of *Zillman* does not cooperate with the switch (59). As discussed above, the switch (59) is actuated by the drive element (10) of the locking bolt (4).

Contrary to the assertion in the action, the control member (35) of *Zillman* does not include a spiral groove (47) cooperating with the switch (59), but instead defines two end faces (47, 48) which are located in a common plane oriented perpendicular to the axis of rotation (8) of the control member. These end faces (47, 48) cooperate with the cross-pin (41) of the drive element (10) of the locking bolt (4).

Thus, *Zillman* likewise fails to disclose every feature required by claim 6.

Because *Zillman* fails to disclose every feature required by claims 1, 2 and 6, withdrawal of this rejection is respectfully requested.

4. Rejection of claims 1 and 3 under 35 U.S.C. 103(a) as being unpatentable over U.S. patent 4,643,009 (*Sato*) in view of U.S. patent 5,092,145 (*Haldric*)

This rejection is respectfully traversed on the basis that the proposed combination of *Sato* and *Haldric* fails to disclose or suggest every limitation required by claim 1.

Turning first to *Sato*, it is submitted that this reference does not disclose a control member comprising a circular control disk and a control member that cooperates with a control member rotary position detector. The steering shaft locking device of *Sato* is depicted in Fig. 1. The device includes a relatively thick control member (21) that cooperates on one side by a cam (29, 30, 31, 32) with a steering shaft locking bolt (18, 19), and is connected on the other side by a mechanical coupling (200) (col. 2, lines 51-52) with the output wheel (36) of a reduction gearing unit (23) driven by an electric motor (22). The output wheel (36), but not the control member (21), is provided at the periphery with an embedded magnet (25) actuating two switches (34, 35) when the locking bolt (18, 19) is in the steering shaft release position or respectively in the steering shaft locking position. The two switches (34, 35) are disposed in two openings (27, 28) of the casing (24) of the reduction gearing unit (23) and of its output wheel (36).

From these observations, it is clear that the locking bolt control member (21) of *Sato* is not a circular disk, and does not cooperate with the switches (34, 35) to form a control member rotary position detector.

As for *Haldric*, this reference fails to make up for the basic shortcomings of *Sato*. *Haldric* discloses a device for locking a steering shaft (10) of a motor vehicle against rotation by a locking bolt (12) cooperating with locking recesses (23) of the steering shaft (10) and adapted to be reciprocated axially between a steering shaft locking position and a steering shaft release position by a lock which has a fixed case (13) and which is actuated manually by a key (14). *Haldric* does not disclose a control member comprising a circular control disk, and further does not disclose a rotary position detector.

In view of these observations, it is submitted that the proposed combination of *Sato* and *Haldric* fails to render claim 1 and claim 3, which is dependent from claim 1, obvious. Accordingly, withdrawal of this rejection is respectfully requested.

5. Rejection of claims 1-3 under 35 U.S.C. 103(a) as being unpatentable over U.S. patent 6,571,587 (*Dimig*) in view of U.S. patent 5,092,145 (*Haldric*) and U.S. patent 4,643,009 (*Sato*)

This rejection is respectfully traversed on the basis that the proposed combination of *Dimig*, *Haldric* and *Sato* fails to disclose or suggest every limitation required by claim 1.

Observations on the shortcomings of *Haldric* and *Sato* are provided above in reference to section 4 of these remarks.

In turning attention to *Dimig*, it is readily apparent that *Dimig* fails to teach certain features of claim 1, as detailed in the following:

(1) *Dimig* fails to disclose a locking bolt control member formed as a circular control disk. Instead, *Dimig* teaches a locking bolt control member formed as a cam (32) of considerable thickness greater than that of a worm gear (30) and separated therefrom by a distance greater than a thickness of a worm gear (30).

(2) *Dimig* fails to disclose a locking bolt control member cooperating by the first side with the locking bolt and by the second side with a rotary position detector. Instead, *Dimig* teaches a locking bolt control cam (32) which cooperates by its circumferential cam surface (40) with both the locking bolt (14) and the sensors (56, 58) which are located on the worm gear (30).

In observing the teachings of *Dimig*, this reference generally teaches a device for locking a steering shaft by a locking bolt (14) which cooperates with locking recesses on the steering shaft, i.e., can engage within the teeth of a gear fixed on the steering shaft (col. 4, lines 29+), and which can be axially reciprocated between a

steering shaft locking position (Fig. 3) and a steering shaft release position (Fig. 4) by a control member (32) that can be rotated to and fro by an electric motor (18) and cooperate with two sensors (56, 58) (Fig. 2).

The control member of *Dimig* consists a cam (32) including a peripheral cam surface (40) having a special shape (Figs. 5A-5E). With the circumferential cam surface (40), the cam (32) slides along a follower surface (38) of a lateral arm (42) of the locking bolt (14) in order to move the locking bolt (14) against the force of a helical compression spring (46) into the steering shaft release position, which spring (46) urges the locking bolt (14) into the steering shaft locking position. From the circumferential cam surface (40) of the cam (32), each of the two sensors (56, 58) is actuated in order to deactivate the electric motor (18), when the locking bolt (14) reaches the steering shaft locking position or respectively the steering shaft release position.

The cam (32) is driven by the electric motor (18) through a worm gear (30) and a worm (34) fixed on the output shaft (24) of the electric motor (18) and engaging the worm gear (30). The worm gear (30) and the cam (32) are secured on a common shaft (28) and spaced apart from each other defining a gap therebetween (Figs. 1-4).

Taking into consideration all of the teachings of *Dimig* and those of *Sato* and *Haldric*, the skilled person would not find the desirability to modify the basic teachings of *Dimig* with those of *Sato* and *Haldric* to arrive at a device having all of the features required by pending claim 1.

From these observations on *Dimig*, and the foregoing observations on *Sato* and *Haldric*, it is submitted that the combination of these references fails to disclose or suggest every feature required by claim 1 from which claims 2 and 3 depend.

Accordingly, withdrawal of this rejection is respectfully requested.

6. Rejection of claim 4 under 35 U.S.C. 103(a) as being unpatentable over U.S. patent 6,571,587 (*Dimig*) in view of U.S. patent 5,092,145 (*Haldric*), U.S. patent 4,643,009 (*Sato*) and further in view of U.S. patent 6,295,848 (*Suzuki*)

This rejection is traversed on the basis that *Suzuki* fails to make up for the basic shortcomings of *Dimig*, *Haldric* and *Sato* with regard to claim 1 from which claim 4 depends, as detailed above in section (5) of these remarks.

In observing *Suzuki*, this patent describes in Figs. 10 – 12 a device for locking the steering shaft (7) against rotation by a locking bolt (32, 34) which is adapted to be reciprocated between a steering shaft locking position (Fig. 10) and a steering shaft release position (Fig. 11) by a gear (40) which is driven by an electric motor (38) through a gear (39) fixed on the output shaft (38a) of the electric motor (38) and engaging the gear (40). The locking bolt (32, 34) is disposed and movable transversely relative to the axis of rotation of the gear (40) which engages a lateral longitudinal gear rack (34b) of the locking bolt (32, 34).

From these observations, it is clear that the known locking bolt (32, 34) of *Suzuki* is not displaceable to and fro radially with respect to the axis of rotation of the gear (40) and the known electric motor (38) is not located next to the locking bolt (32, 34) but at a certain distance (i.e., the distance required to accommodate the gear 40). Accordingly, it is submitted that *Suzuki* does not disclose or suggest the features required by pending claim 4, and the skilled person would not find it obvious to modify the basic teachings of *Dimig* in the manner prescribed by the rejection.

It is thus readily apparent that *Suzuki* fails to make up for the basic shortcomings of *Dimig*, *Haldric* and *Sato* cited against claim 1 from which claim 4 depends.

Accordingly, it is submitted that the combination of *Dimig*, *Haldric*, *Sato* and *Suzkui* fails to render claim 4 obvious. Withdrawal of this rejection is kindly requested.

7. Rejection of claim 5 under 35 U.S.C. 103(a) as being unpatentable over U.S. patent 6,571,587 (*Dimig*) in view of U.S. patent 5,092,145 (*Haldric*), U.S. patent 4,643,009 (*Sato*) and further in view of U.S. patent 6,363,762 (*Kueng*) or U.S. patent 1,786,186 (*Bauermeister*)

This rejection is traversed on the basis that each *Kueng* and *Bauermeister* fails to make up for the basic shortcomings of *Dimig*, *Haldric* and *Sato* with regard to claim 1 from which claim 5 depends, as detailed above in section (5) of these remarks. Neither *Kueng* nor *Bauermeister* discloses or suggests the control disk of claim 5 which has a spiral groove or spiral rib, and which cooperates with the locking bolt and winds around the axis of rotation of the control disk.

In observing *Kueng*, this patent describes in Fig. 11 a device for locking the rotor (1) of a lock cylinder (12) against rotation within the stator (6) of the lock cylinder (12) by a tumbler pin (2) of the lock cylinder (12) axially reciprocable within the stator (6) between as rotor locking position and a rotor position by a transverse lever (4) extending through a transverse bore (22) of a tumbler pin (2) and pivotable about a fulcrum (P) of a support (31) and cooperating at a first end (41) with a helical compression spring (3) enclosed in the support (31) and at a second end (42) with a helix or spiral (55) rotatable to and fro by the output shaft (91) of an electric motor (9).

The device of *Kueng* neither is designed and capable to lock the steering shaft of a motor vehicle against rotation, nor does the device include a circular control disk the first side of which is disposed adjacent to the tumbler pin (2) and which is provided on the first side with the helix or spiral (55) and which cooperates on its second side with any detector sensing a rotary position of the control disk.

Turning to the teachings of *Bauermeister*, this patent teaches a device having a locking bolt (14) which cooperates with locking recesses (8a) of the steering shaft (5) and which can be axially displaced back and forth between a steering shaft locking position and a steering shaft release position by a circular control disk (16) that has a spiral slot (16a) into which a lateral pin (14a) of the locking bolt (14) projects and that can be rotated back and forth by a lock cylinder, the rotor (18) of which can be rotated by a key inserted into the key hole (17) of the rotor which engages with a lateral finger (20) a gap defined by two axially projecting pins (19) of the control disk.

From this, it is clear that the control disk (16) of *Bauermeister* is disposed between the locking bolt (14) and the lock cylinder rotor (18), and cannot cooperate on the side adjacent to the rotor (18) with a detector sensing any rotary position of the control disk (16).

It is thus readily apparent that *Kueng* and *Bauermeister* fail to make up for the basic shortcomings of *Dimig*, *Haldric* and *Sato* cited against claim 1 from which claim 5 depends.

Accordingly, it is submitted that the combination of *Dimig*, *Haldric*, *Sato*, *Kueng* and *Bauermeister* fails to render claim 5 obvious. Withdrawal of this rejection is kindly requested.

8. Notice of References Cited

The applicant has reviewed the other references cited by the examiner and does not consider these references, whether considered individually or collectively, to disclose or suggest every limitation required by the pending claims.

9. Conclusion

In view of the amendment to the claims, and the foregoing observations, it is respectfully submitted that the application is in condition for allowance. Accordingly, it is respectfully requested that the present application be allowed and the application be passed to issue.

If any issues remain that may be resolved by a telephone or facsimile communication with the applicant's attorney, the examiner is invited to contact the undersigned at the numbers shown below.

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